

# VARUN AJITH

+91 8593008087 ◇ Alappuzha, Kerala, India

[varunajithvarun@gmail.com](mailto:varunajithvarun@gmail.com) ◇ [Varun Ajith LinkedIn](#) ◇ [Varun Ajith GitHub](#)

## OBJECTIVE

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Recent Robotics and Automation Engineering graduate with hands-on experience in ROS, autonomous systems, and sensor integration, seeking a Robotics System Engineer position to contribute to Bear Robotics' innovative mobility platform development.

## EDUCATION

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**BTech in Robotics and Automation**, Saintgits College of Engineering, Kottayam 2019 - 2023  
CGPA: 7.7

**Higher Secondary Education**, GHSS Ramapuram 2015 - 2017  
Percentage: 85%

**Secondary Education**, Bishop Moore Vidyapith, Kayamkulam 2010 - 2015  
Percentage: 80%

## SKILLS

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<b>Programming</b>	C++, Python, ROS2, Ladder Logic, ROS
<b>Hardware</b>	Raspberry Pi, ESP32, PLC, Servo Motors, IMU Sensors
<b>Technologies</b>	Ubuntu, LiDAR, GPS, Computer Vision, Sensor Fusion, communication protocols
<b>Tools</b>	Gazebo Simulation, OpenCV, Arduino IDE
<b>Professional skills</b>	Technical Documentation, Critical Thinking, Resilience

## EXPERIENCE

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**Intern** Oct 2024  
Indian Institute of Science (IISc), Bangalore

- Assisted in developing a drone system designed for naval supply missions with extended range and autonomous capabilities.
- Calibrated servo motors for the Shipborne Drone Landing System, ensuring stable horizontal alignment of the landing pad under wave disturbances.
- Simulated drone dynamics and control algorithms in Gazebo, contributing to the refinement of flight performance and stability.
- Gained in-depth knowledge of control theories and their mathematical and physical principles while collaborating with research teams.

## PROJECTS

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- Search and Rescue Robot:** Designed and developed a six-legged robot for search and rescue operation using LiDAR and GPS. Developed motion planning algorithms and sensor integration for navigation in dynamic environments, reducing fatality by 12%.
- Gesture-Controlled Robot Car:** Implemented gesture recognition algorithms to achieve real-time control of a robotic car using IMU sensors.
- Automated Metal Segregator:** Engineered a PLC-based sorting system with sensors, optimizing accuracy and throughput by 5%.
- Auto Mains Fail (AMF):** Designed a PLC ladder logic system, reducing power failure response time in industrial systems by 2%.

## CERTIFICATION

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Completed a **PG Diploma in Industrial Automation** at SMEC Labs, Kochi, from August 2023 - December 2023. Acquired expertise in PLC programming, SCADA systems, and industrial robotics.

## PUBLICATION

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Published a paper titled '**Search and Rescue Robot**' in Volume 12, Issue 1, 2024 of the International Journal of Science, Engineering, and Technology (IJSET). The paper covers the development and deployment of an autonomous robot for emergency navigation.

## TECHNICAL COMPETENCIES

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- Proficient in ROS2, SLAM, and sensor fusion techniques.
- Experienced in integrating sensors like LiDAR, GPS and IMUs into robotic systems.
- Skilled in developing autonomous navigation and motion planning algorithms.
- Hands-on experience with robotic simulations using Gazebo and perception tools like OpenCV.
- Knowledgeable in communication protocols such as Modbus, UART, and profibus.